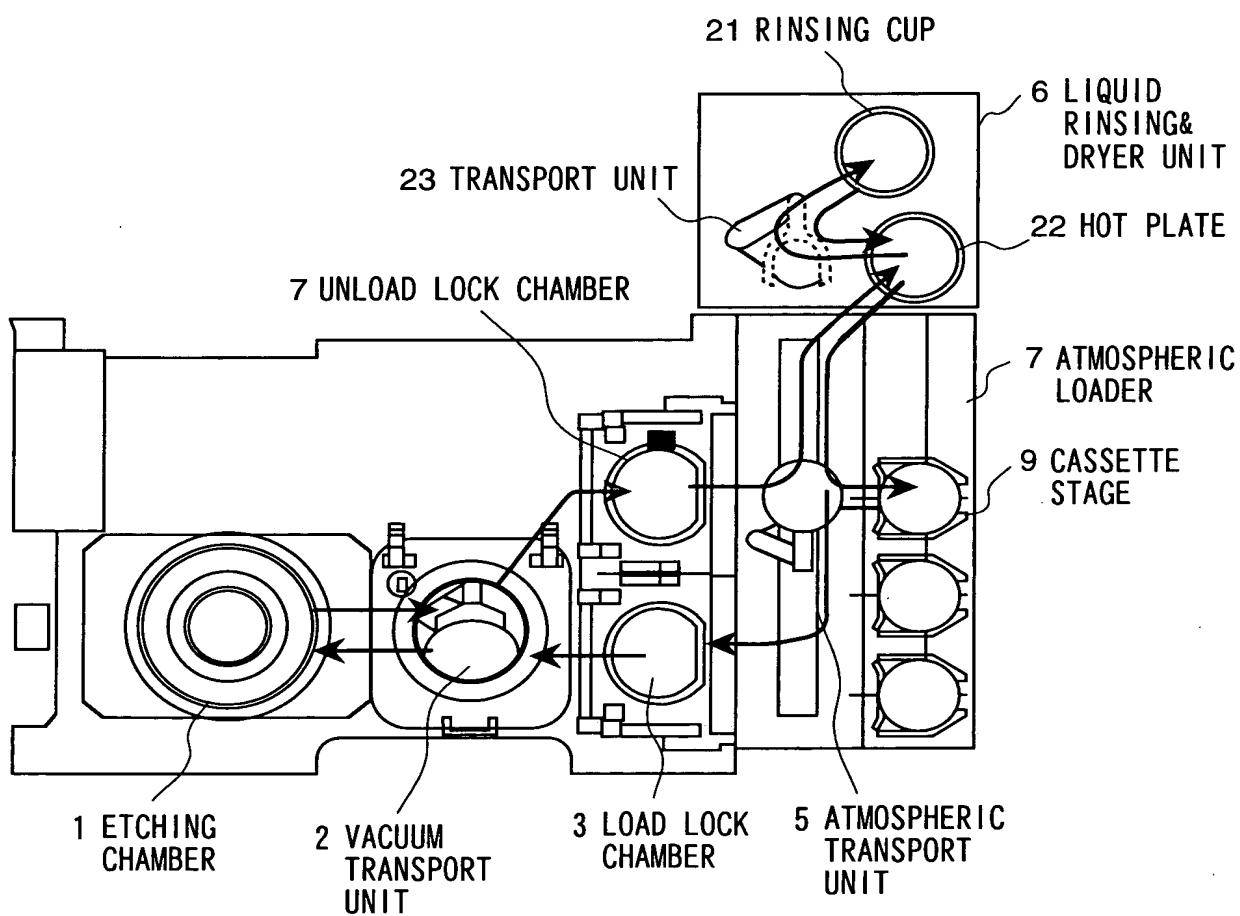
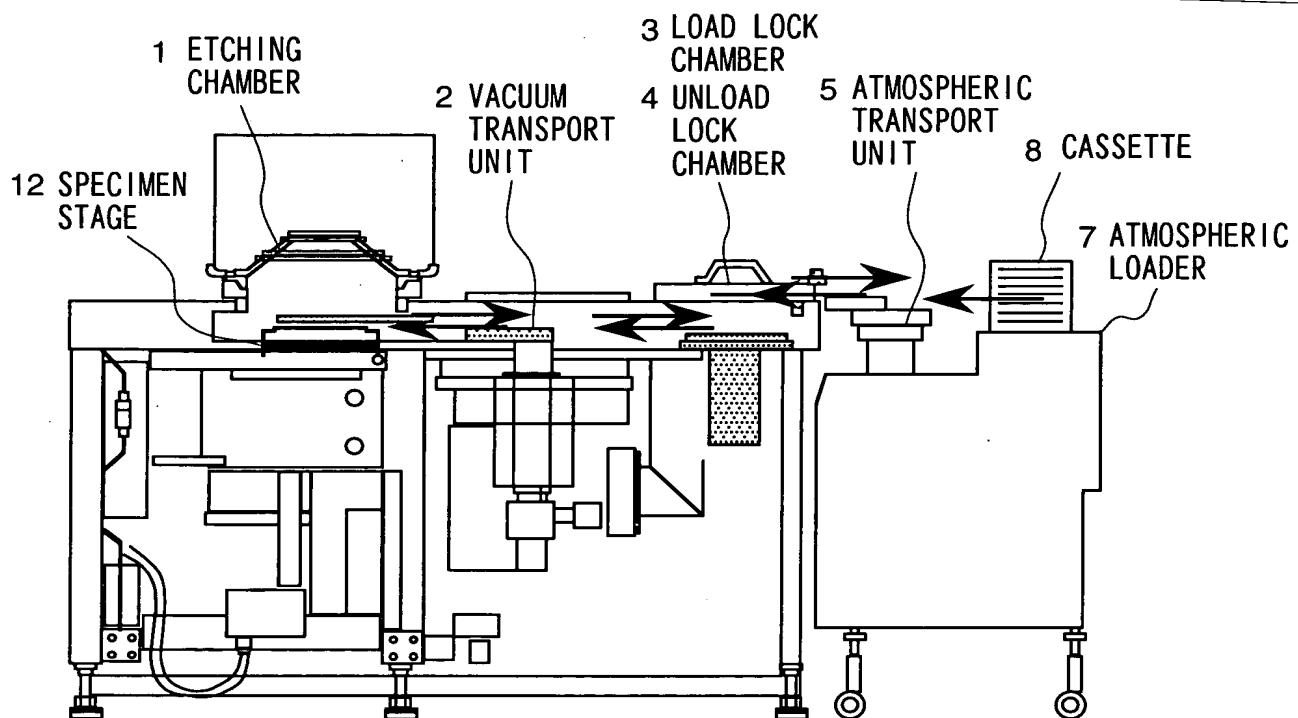
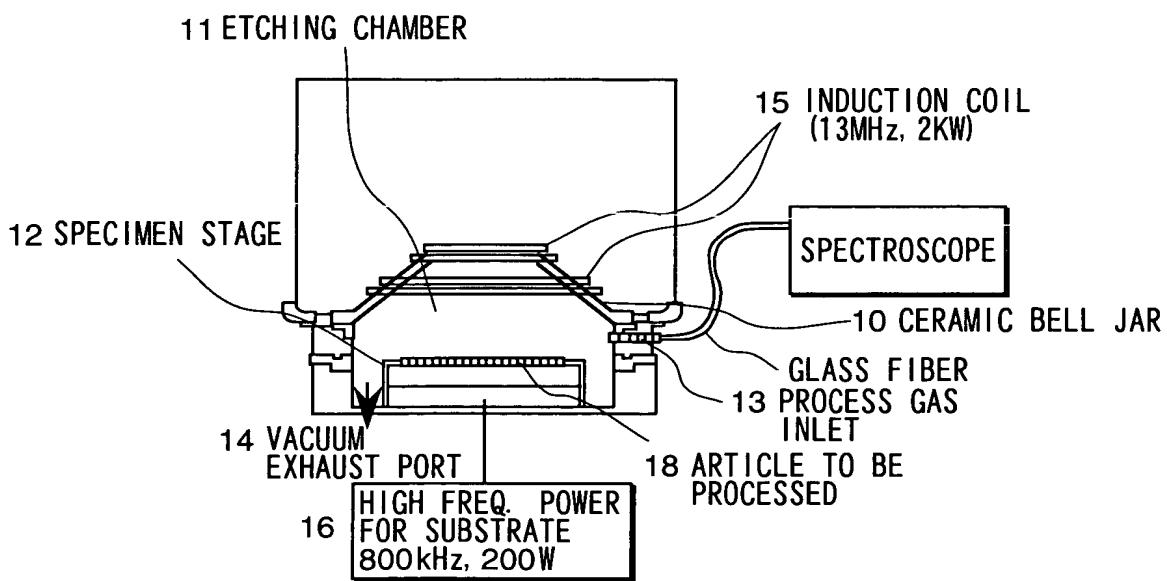
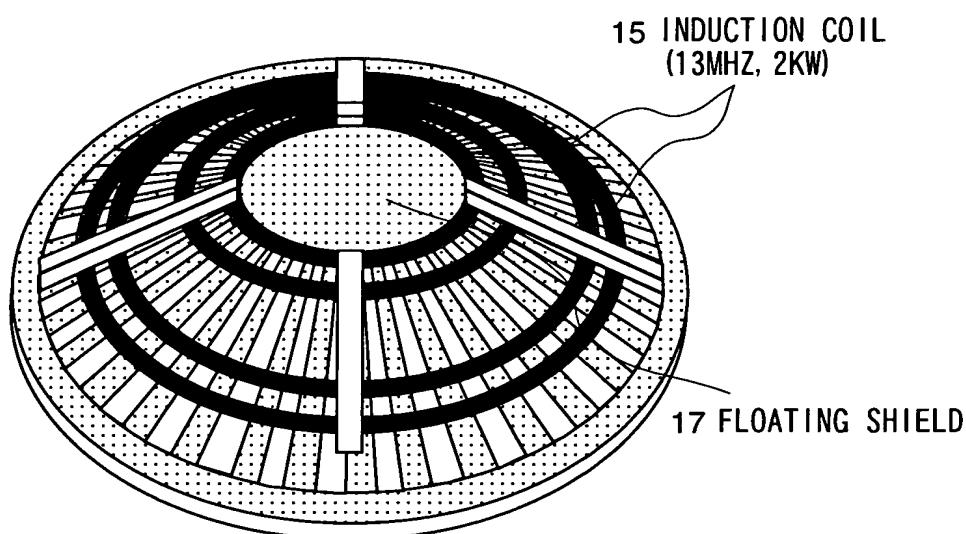


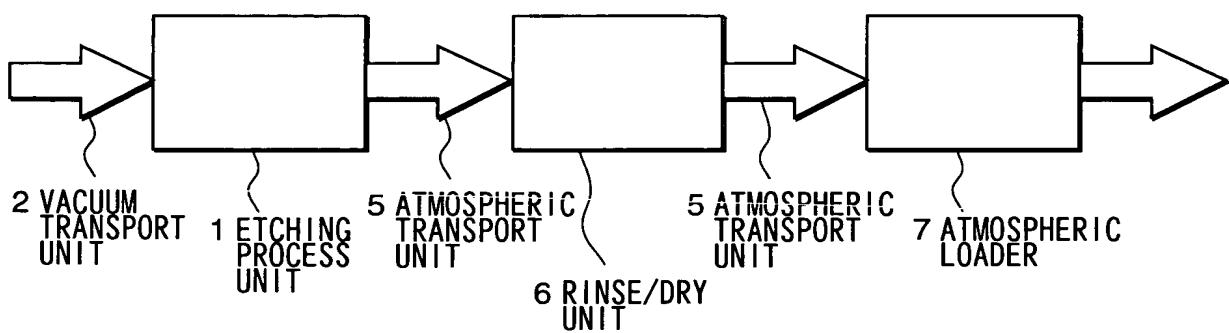
**FIG.1**

***FIG.2******FIG.3***

**FIG.4**



**FIG.5**



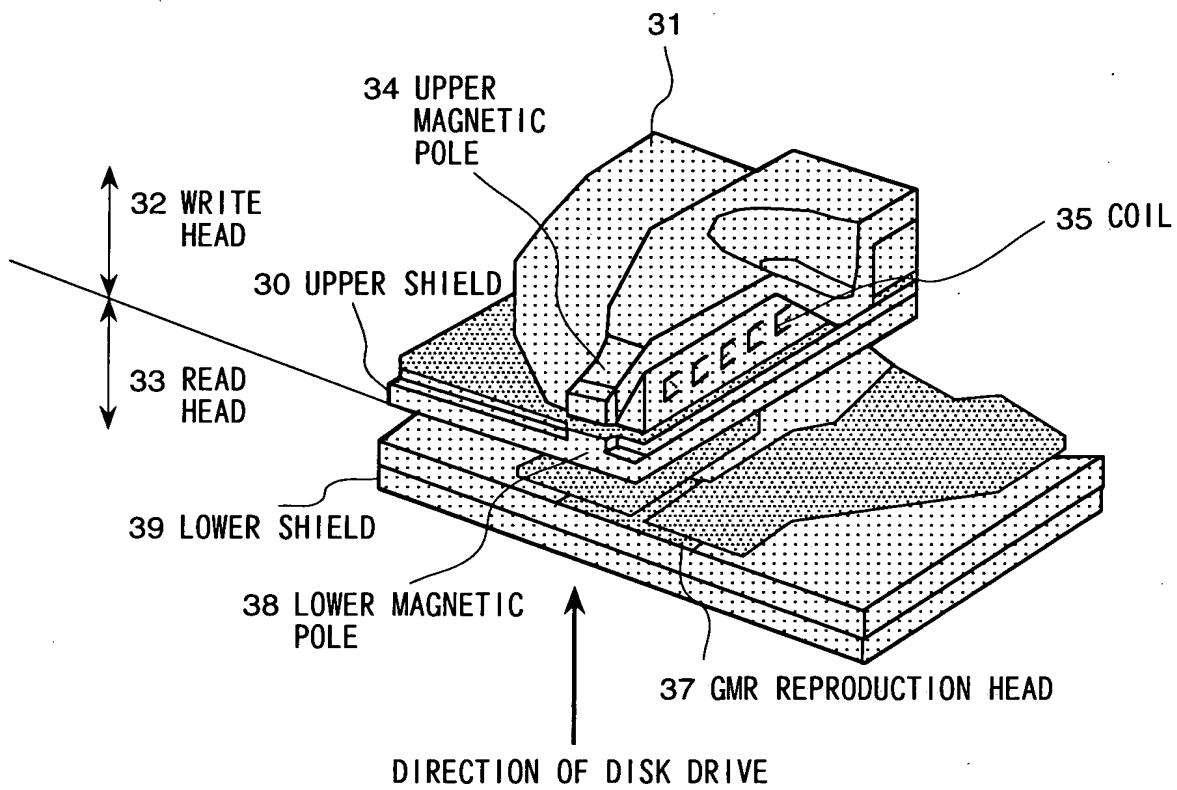
**FIG.6**

FIG.7

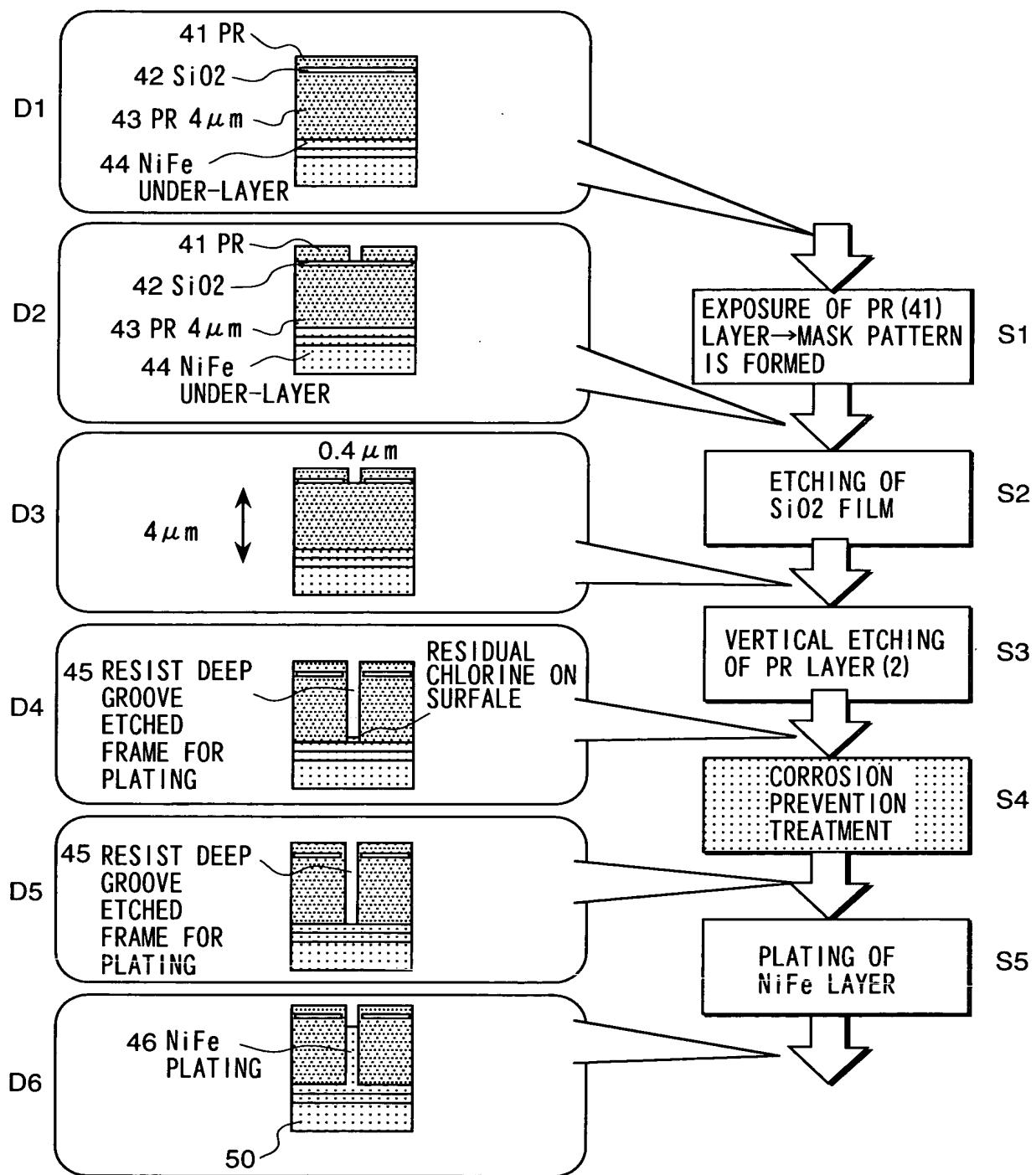


FIG.8

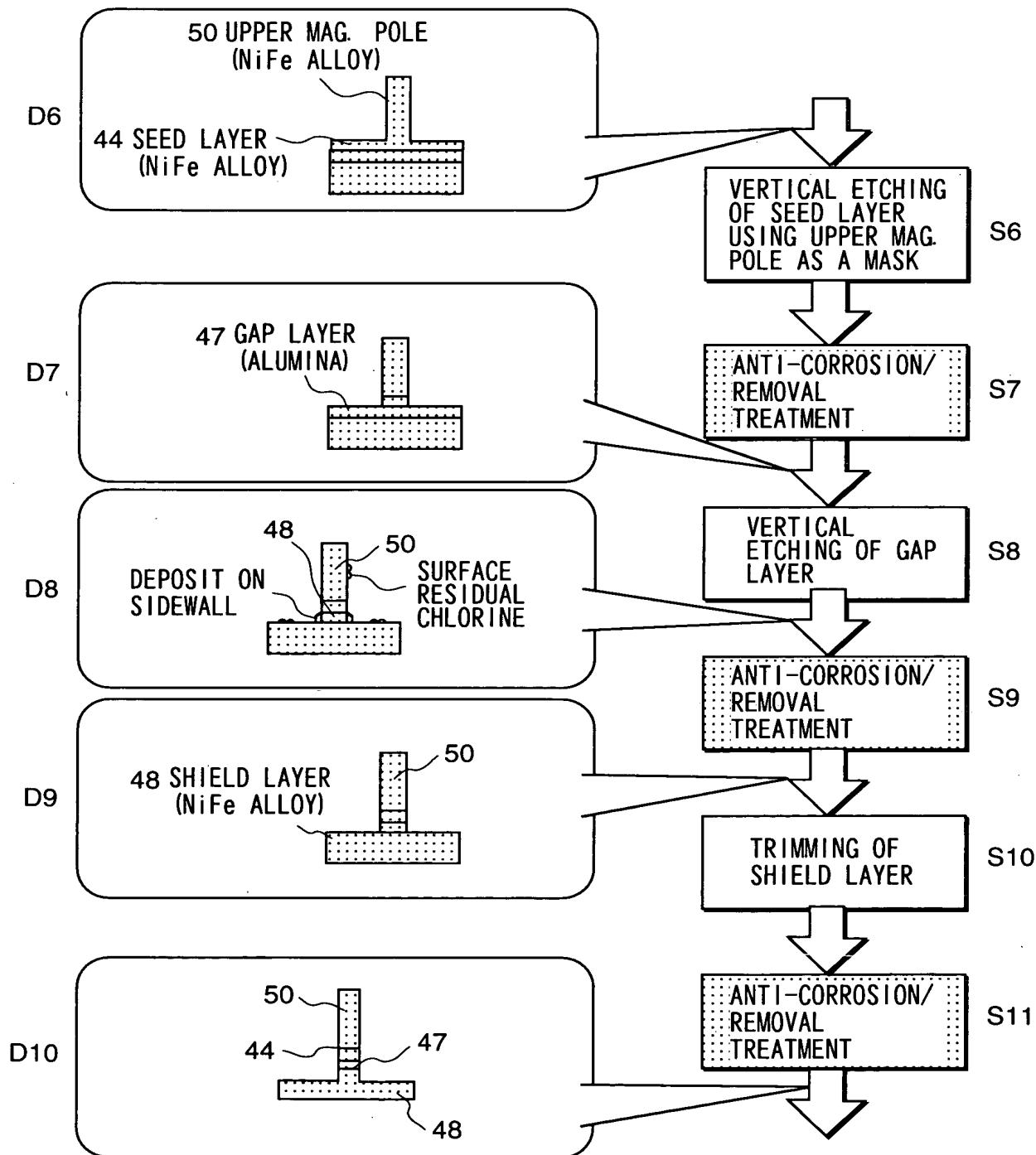
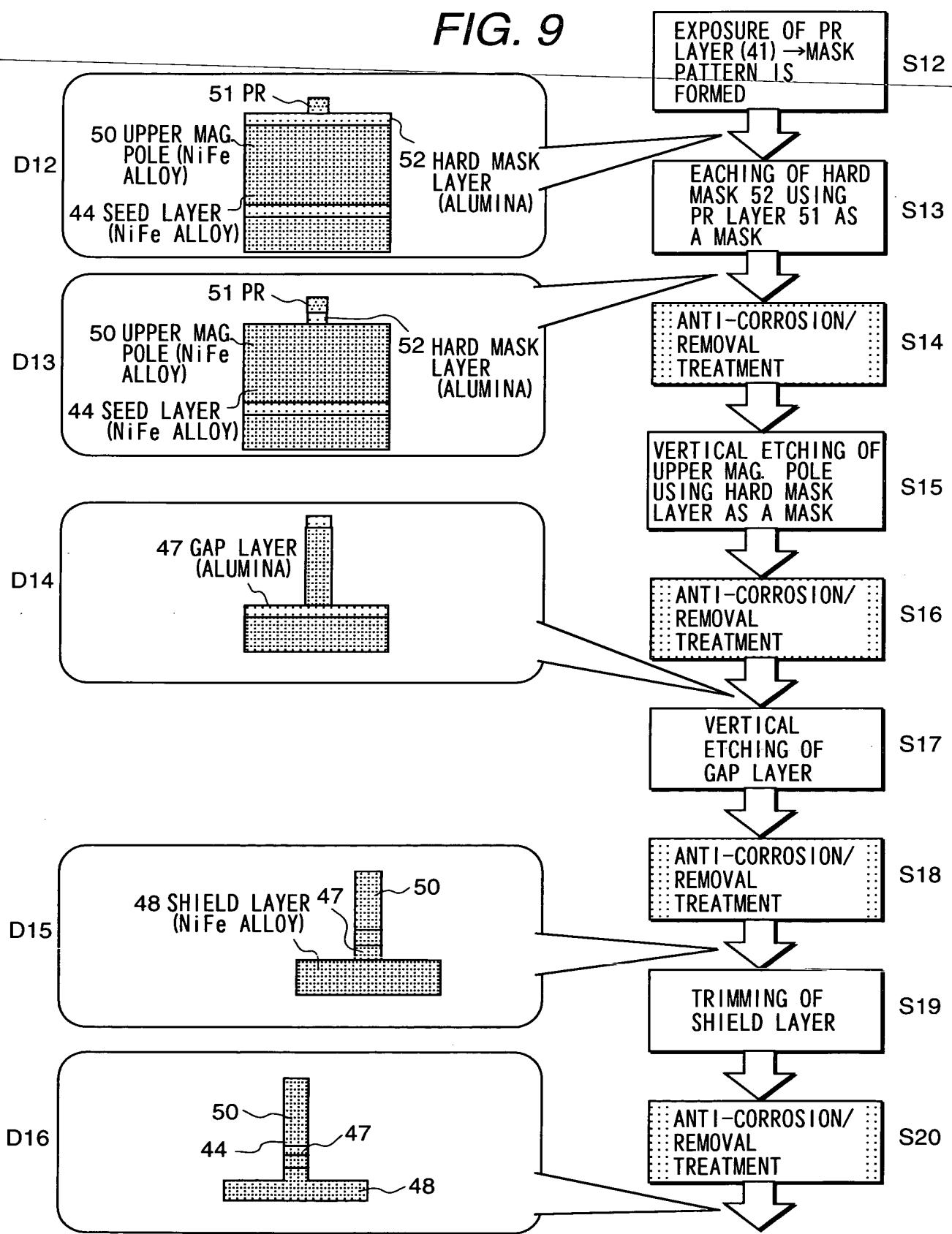
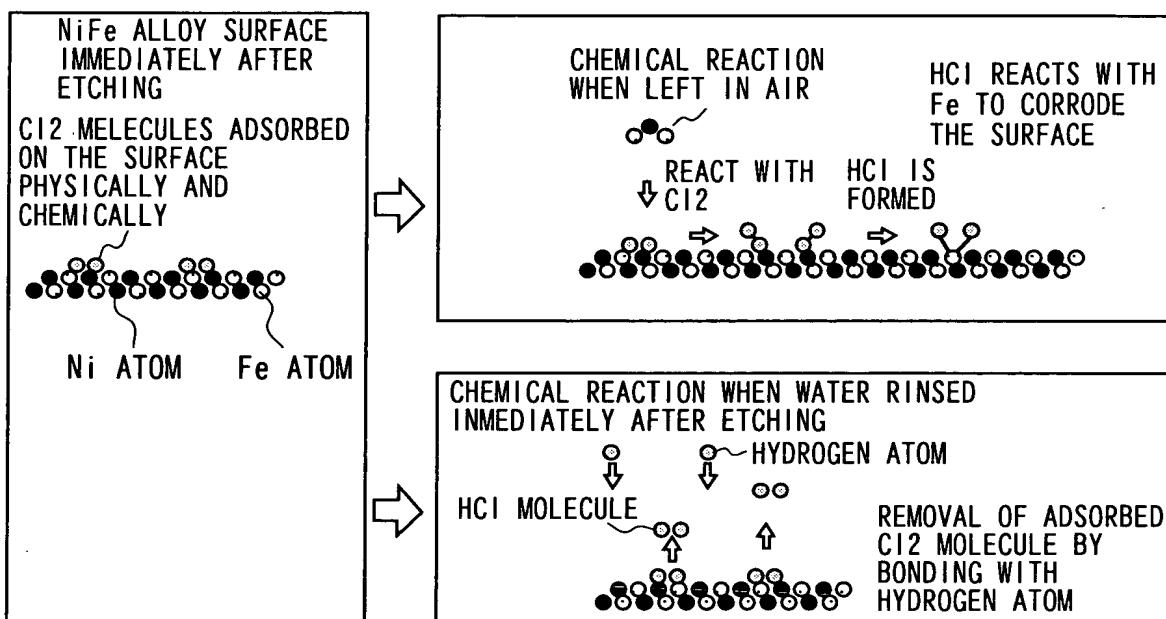


FIG. 9



**FIG.10****FIG.12**

	BEFOR ETCHING	AFTER ETCHING
PLASMA ETCHING	GAP LAYER	
MILLING	A LONGER INITIAL LENGTH OF UPPER MAGNETIC POLE NECESSITATED DUE TO LOW SELECTIVITY RATIO → DIFFICULT TO OBTAIN PRECISE SIZE CONTROL	DIFFICULT TO OBTAIN VERTICAL PATTERN

FIG. 11

EXPERIMENTAL CONDITIONS*	TIME UNTIL CORROSION OCCURS
LEFT IN AIR AFTER ETCHING OF GAP LAYER	5 MIN.
LEFT IN AIR AFTER PURE WATER RINSING/DRYING WITHIN 2 MIN. AFTER ETCHING OF GAP LAYER	AFTER MORE THAN 2 WEEKS

ITEM	UNIT	RESULT
RATE	nm/min	108.5

## \*OTHER CONDITIONS

ITEM	CONDITIONS
DEVICE STRUCTURES PRIOR TO & AFTER ETCHING	UPPER MAG. POLE (NiFe ALLOY)      GAP LAYER (ALUMINA)      SHIELD LAYER (NiFe ALLOY)
GAS	Cl 20sccm+BCl3 30sccm
PRESSURE	0.3Pa
STAGE TEMP.	40°C
SOURCE RF POWER	750W
SOURCE RF FREQ.	13.56MHz
BIAS RF POWER	60W
BIAS RF FREQ.	800KHz